



IMN Curriculum & Host Manual



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DNR

Indiana Department of Natural Resources

IMN

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Statewide Curriculum

The mission of the Indiana Master Naturalist program is to bring together natural resource specialists with adult learners to foster an understanding of Indiana's plants, water, soils and wildlife, and promote volunteer service in local communities.

*Let children walk with
Nature, let them see
the beautiful blendings
and communions of
death and life, their
joyous inseparable
unity, as taught in
woods and meadows,
plains and mountains
and streams of our
blessed star, and they
will learn that death is
stingless indeed, and
as beautiful as life.*

- John Muir

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The mission of the Indiana Master Naturalist program is to bring together natural resource specialists with adult learners to foster an understanding of Indiana's plants, water, soils and wildlife, and promote volunteer service in local communities.

"The care of the Earth is our most ancient and most worthy, and after all our most pleasing responsibility. To cherish what remains of it and to foster its renewal is our hope."

-Wendell Berry

IMN Program Overview

The Purpose

The Indiana Master Naturalist (IMN) Program can provide participants with many hands-on opportunities to learn about our Hoosier natural resources. It also provides a way for you to share that knowledge, along with your life experiences, through volunteer service to land trusts, soil and water conservation districts, state and local parks, or other natural resource and conservation organizations. The purpose of IMN includes:

- Providing an introduction to Hoosier natural resources through the eyes of resource professionals and experts in the field.
- Providing an educational opportunity to individuals 18 years or older.
- Providing an opportunity for course participants to establish a short or long-term partnership with a natural resources agency or local organization involved in natural resource management by volunteering as a part of the course.
- Providing a financially self-supporting program.

The Mission

The mission of the Indiana Master Naturalist program is to bring together natural resource specialists with adult learners to foster an understanding of Indiana's plants, water, soils and wildlife, and promote volunteer service in local communities.

The Audience

Open to any adult, but in general, course participants are Hoosiers with a genuine love for the out-of-doors, but limited formal science/natural resources training. They take the course to expand their knowledge of plants, wildlife, soils and other natural resources in Indiana. They expect to volunteer in some capacity after they complete the coursework. Some workshops have included individuals who own landscaping or outdoor adventure/ teaching businesses; these individuals may be supplementing their knowledge or planning to use the certification in support of their work. Class sizes vary, but usually will not exceed 30 students.



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***Nature is man's
teacher. She unfolds
her treasures to his
search, unseals his
eye, illumines his mind,
and purifies his heart;
an influence breathes
from all the sights and
sounds of her
existence.***

- Alfred Billings Street

IMN

Curriculum



Indiana Master Naturalist



Purpose

IMN Curriculum

The Curriculum in this manual is intended to serve as a guideline for hosts and speakers. The objectives contained in the curriculum represent the basic level of knowledge that any person certified as an Indiana Master Naturalist should possess. The objectives are crafted to be broad enough to allow hosts and speakers to tailor their classes to their needs, geography, and interests, but specific enough to target those attributes that make the natural resources of Indiana unique.



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“Study nature, love nature, stay close to nature. It will never fail you.”

-Frank Lloyd Wright

Required Topics

The minimum number of 24 hours class time for an approved Indiana Master Naturalist course is distributed among the following topic areas for the 8 required sessions:

Botany (2 three-hour sessions)

Geology and Soils (1 three-hour session)

Miscellaneous Related Topic (1 three-hour session)

People and Natural Resources (1 three-hour session)

Water (1 three-hour session)

Zoology (2 three-hour sessions)



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*Climb up on some hill
at sunrise. Everybody
needs perspective
once in a while, and
you'll find it there.*

- Robb Sagendorph

Botany

Objectives

1. Recall the differences and meanings of endangered, threatened, rare, and extirpated.
2. Discuss taxonomic principles, including the importance of Latin naming convention.
3. Recite the 12 natural regions of Indiana and their characteristics.
4. Become familiar with and describe the major parts of herbaceous and woody plants.
5. Write the stages of succession in ecosystems.
6. Explain what an invasive plant is and give some examples.
7. Identify at least ten native plants and ten native trees of Indiana.
8. Describe the classes of plants in Indiana (vascular and non-vascular).
9. Paraphrase the benefits of plants and trees (such as urban forests, plant uses, timber uses, etc.) and their management.
10. Differentiate the strata of the forest (forest floor, herbaceous layer, shrub layer, understory, and upper canopy).
11. Summarize the functions of fungi.



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Look at the trees, look at the birds, look at the clouds, look at the stars... and if you have eyes you will be able to see that the whole existence is joyful. Everything is simply happy. Trees are happy for no reason; they are not going to become prime ministers or presidents and they are not going to become rich and they will never have any bank balance. Look at the flowers - for no reason. It is simply unbelievable how happy flowers are.

- Osho

Geology and Soils Objectives

1. Recall the geologic history of Indiana (Precambrian to today).
2. Compare the important features of Indiana Geology (lithology / stratigraphy, glaciation, faulting and earthquakes, karst features, fossils, economic reserves, and local stratigraphy / collecting).
3. Describe the various landform regions of Indiana and their formation.
4. Discuss the hydrologic cycle and describe all possible sources of water.
5. Explain the physical and chemical properties of soil.
6. Summarize ways to prevent soil erosion.



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Nature will bear the closest inspection. She invites us to lay our eye level with her smallest leaf, and take an insect view of its plain.

- Henry David Thoreau

Miscellaneous Related Topics

This is your elective class. Below is a list of potential topics for your consideration. The elective must relate to Indiana natural resources but you are not limited to this list:

- Survival
- Meteorology
- Astronomy
- Environmental education/interpretation
- First aid
- Orienteering
- Folklore
- Volunteerism
- Photography
- Outdoor skills and hobbies
- Wildlife rehabilitation
- Local or regional topics of interest



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There is not a sprig of grass that shoots uninteresting to me.

- Thomas Jefferson

People and Natural Resources Objectives

1. Explain the differences and meanings of, restoration, preservation, conservation and management of natural resources, including management tools (identifying indicator species, prescribed burns, timber stand improvement, etc.).
2. Name natural resource agencies at the local, state, and federal levels and their area of responsibility.
3. Describe and define archeology and the Indiana antiquities law.
4. Discuss how people have benefited from and impacted natural resources in historical and modern times.
5. Identify Indiana's early naturalists and their accomplishments.
6. Compare important naturalist authors (e.g. Leopold, Thoreau, Carson, Louv, Sanders, Porter, etc.).



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***Look deep into nature,
and then you will
understand everything
better.***

- Albert Einstein

Water Objectives

1. Describe the hydrologic cycle.
2. Contrast Indiana's aquatic systems (rivers, lakes, ponds, streams).
3. Explain what a watershed is and its characteristics.
4. Discuss land use effects on water quality.
5. Summarize the threats and management to Indiana aquatic systems.
6. Define what a wetland is and their value and functions.
7. Compare the types of wetlands (natural and constructed) found in Indiana.
8. Relate water and wetland conservation efforts in Indiana.



***I go to nature to be
soothed and healed,
and to have my senses
put in order.***

- John Burroughs

Zoology

Objectives

1. Describe the differences and meanings of endangered, threatened, species of special concern, and extirpated.
2. Summarize the principles of, and threats to, biodiversity (benefits, health, economics) in Indiana.
3. Explain taxonomic principles, including the importance of the Latin naming convention.
4. List characteristics of major vertebrate and invertebrate animal groups.
5. Understand and describe the ecological niche and energy flow of animals (food chain, food web, and food pyramid).
6. Define what an invasive animal is and give some examples.
7. Identify at least 5 species from each vertebrate group (birds, mammals, fish, reptiles, amphibian) and ten invertebrates (mollusks, arachnids, insects) of Indiana.
8. Recite habitats and habitat components (food, water, shelter, and special factors) and how change in these components effects the ecosystem.
9. State animal behavioral characteristics and their adaptations to environments and environmental changes (hibernation, migration, coexistence).



***Nature chose for a
tool, not the earth-
quake or lightning to
rend and split asunder,
not the stormy torrent
or eroding rain, but the
tender snow-flowers
noiselessly falling
through unnumbered
centuries.***

- John Muir

Host Manual



Indiana Master Naturalist



The IMN Course: Step-by-Step

1. Review the "Sponsor a Class" link on the Indiana Master Naturalist website at www.indianamasternaturalist.org to make sure your natural resources agency is ready to sponsor a workshop.
2. Talk with local residents and other natural resources agencies to find out if a workshop is already in the planning stages in your area. Gauge how much interest there might be in a workshop if none has been sponsored. Check with the state coordinator (317) 232-4143 or gmurphy@dnr.in.gov or check the website for other upcoming classes at www.indianamasternaturalist.org.
3. Select a time frame (most classes are held weekly in the evenings from 6-9 p.m. or 7-10 p.m., but Saturday mornings or a daytime class may be effective as well).
4. Select a convenient location for the workshop. Be sure to find out any meeting room usage fees so you can reflect those in your workshop cost.
5. Tentatively schedule speakers for the sessions, and determine any fees they may charge. These will impact your final course cost. Speaker topics should be within the framework established by the IMN Advisory Council and should include sessions as follows: 2 Botany, 2 Zoology, 1 Geology/Soils, 1 Water, 1 People and Natural Resources and 1 Miscellaneous related topic that you choose to fit your agency/location.
6. Establish a budget for the workshop. Be sure to include any building rental costs, speaker fees, funds for resource materials to be purchased, refreshments if appropriate, and the \$10/person administrative fee that is submitted after the workshop to the IMN state coordinator.
7. Based on the total costs and the number of individuals you can manage in the class (generally no more than 30 for effective teaching), establish a course fee. This may vary with speaker/material costs, but usually ranges from \$50-80.
8. Submit a workshop application form. This should include your course cost, dates, topics for each session and speakers (if possible).
9. After the workshop has been approved by the IMN Advisory Council, begin publicizing it. The IMN state coordinator will ensure that your workshop is posted on the IMN website and can send an e-mail notification to all those who have contacted the coordinator about workshops in their area.



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***Climb the mountains
and get their good
tidings. Nature's
peace will flow into
you as sunshine flows
into trees. The winds
will blow their own
freshness into you,
and the storms their
energy, while cares will
drop off like autumn
leaves.***

- John Muir

The IMN Course: Step-by-Step

10. Ensure that staff are informed about the program and are available to handle workshop registrations. General information about the program is available on the website.

11. When the class is full, establish a waiting list for future workshops and contact the IMN state coordinator, who will post a notice on the website that the class is full.

12. Provide speakers with a copy of the “IMN Program Guidelines for Speakers,” and the IMN Curriculum Guide. Both are available on the website. Ensure that each speaker knows the meeting date, time, location and expected topic. Ensure that each speaker will provide appropriate handouts or will give you a single copy so you can provide handouts. Be sure to ask speakers about their audiovisual equipment and space needs for their sessions.

13. Put together participant notebooks with handouts and good resource materials. Purchase field guides or other resource books as budgeted. The IMN logo is on the website for your use as needed.

14. Plan for room setup to provide convenience for speakers and comfort/friendly atmosphere for participants. Parking, easy access to restrooms, comfortable chairs and tables to write on, ease of visibility of visuals such as slides, flip charts, etc. are some things to consider. Don't forget to use nametags or name “tents” on tables at each session—remember, each speaker is new even if the students aren't!

15. Plan an icebreaker/get acquainted activity for the first session to help participants learn about each other and prepare for working together.

16. Plan for refreshments and breaks during each session.

17. Ensure that someone from your agency will be on hand throughout each session to serve as the host, timekeeper and speaker assistant. This individual should also keep track of attendance, since participants must complete at least 80% of the classes. After each session, ask participants to complete a speaker evaluation form. You will keep these on file and provide copies to each speaker if they request them. This will help you evaluate speakers for future workshops.

18. At the first session, provide a quick overview of the program. Remind participants what is required to obtain certification as an Indiana Master Naturalist including certificate, pin, and newsletter subscription.



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***In wilderness I sense
the miracle of life, and
behind it our scientific
accomplishments fade
to trivia.***

***- Charles A. Lindbergh,
Life, 22 December 1967***

The IMN Course: Step-by-Step

19. Prepare an “open book” quiz, based on the course content, for the final session. You can ask each speaker to provide you with some appropriate questions, or you can design this final quiz based on what you heard during each session.

20. At the last session, make time to remind participants about the requirements for volunteer service and distribute the volunteer hours forms. Also at the last session, ask participants to complete a course evaluation form. Give the final quiz/test. Be sure to let them know about the Indiana Master Naturalist listserve that is available for all class participants, and about the IMN logoed items that are available for those who complete volunteer hours and get certified.

21. After the workshop, complete the workshop report form and the student workshop roster (forms on the website), and return them along with copies of the course evaluation forms to the IMN state coordinator with the total administrative fee (\$10/participant). If your agency requires an invoice for submission of payment, please let the IMN state coordinator know that. You will receive a receipt letter.

22. If possible, provide a list of, or suggestions for, volunteer opportunities to students.

23. Enter names and addresses of all course participants in a locally-maintained database so you can contact them in the event we develop advanced courses or other materials in the future. Stay in touch with your class participants as much as your time allows, and if they have an interest in organizing “reunions” or regular meetings, assist as you can with that effort. Keeping them connected with you and with each other can help us link them with future volunteer opportunities as well.

24. Send thank you notes to each of your speakers.

25. As course participants complete volunteer service, notify the IMN state coordinator and provide a copy of volunteer service records for the individual (to include name, address and e-mail for the newsletter). The IMN state coordinator will then send a pin and certificate to each newly certified Indiana Master Naturalist (unless you notify the coordinator that you wish to conduct a graduation ceremony and present the pins & certificates yourself).

26. Provide local media with the opportunity to photograph the presentations of pins & certificates—this will be good publicity for future workshops that you might host!



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In June as many as a dozen species may burst their buds on a single day. No man can heed all of these anniversaries; no man can ignore all of them.

- Aldo Leopold

IMN Course Forms

The latest version of all forms can be downloaded from the “Sponsor a Class” link on the IMN Website at www.indianamasternaturalist.org.

These forms include:

- Workshop Application—to be completed for approval by the IMN Advisory Council if your agency wishes to host an IMN workshop.
- Workshop Roster—to be completed at the end of the class with names, addresses and other contact information for all participants and sent to the IMN Coordinator
- IMN Creed—to be distributed to each student for signature at the introductory class for each workshop.
- Student Workshop Evaluation—to be completed by each student at the end of the workshop. Copies should be provided to the IMN Coordinator.
- Instructor Evaluation—to be completed by each student after each session. Copies can be kept in your local files for future reference.
- Workshop Review Form—to be completed by the class host and submitted to the IMN Coordinator. This is your review of the overall class and planning process.
- Volunteer Hours Record—have your students use this form to document their volunteer hours and submit it for certification when hours are complete.
- Instructor Guidelines—provide each speaker with a copy of these guidelines to help them tailor their presentation for your group.

If you have questions or need additional information, please contact:

Indiana Master Naturalist Program
Division of State Parks and Reservoirs
402 W. Washington Room W296
Indianapolis, IN 46204

Phone: 317-232-4143
Email: gmurphy@dnr.IN.gov



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“Nature is man's teacher. She unfolds her treasures to his search, unseals his eye, illumines his mind, and purifies his heart; an influence breathes from all the sights and sounds of her existence.”

-Alfred Bernhard Nobel